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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,794	03/23/2005	Osamu Ishigami	SHM-15962	9163

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EXAMINER	
ZHENG, LOIS L	
ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/528,794	ISHIGAMI ET AL.	
	Examiner	Art Unit	
	LOIS ZHENG	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claim 1 is amended in view of applicant's amendment filed 14 March 2008. Claim 2 is canceled. Therefore, claims 1 and 3-9 are currently under examination.

Status of Previous Rejections

2. The rejection of claims 1 and 3-4 under 35 U.S.C. 103(a) as being unpatentable over Heimann et al. US 2003/0034095 A1(Heimann) in view of Kovacs et al. US 5,211,663(Kovacs) is withdrawn in view of applicant's claim amendment filed 14 March 2008.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-012990(JP'990), and further in view of Kovacs et al. US 5,211,663 (Kovacs).

JP'990 teaches a passivation method for treating a metal workpiece to improve corrosion resistance, wherein the metal workpiece is immersed in an alkaline passivation solution comprising an alkaline agent such as sodium bicarbonate, calcium carbonate, and carbon dioxide (abstract, paragraph [0021]). Air bubbles are generated in the alkaline passivation solution and the pH of the passivation solution is controlled

(abstract, paragraphs [0006-0012]). JP'990 further teaches such passivation method can be applied to metals such as stainless steel(abstract, paragraph [0014]).

However, JP'990 does not explicitly teach the claimed treatment temperature of 40-60°C.

Kovacs teaches a passivation method for treating metal surfaces such as stainless steel(abstract). Kovacs further teaches that the passivation solution may be oxygenated by bubbling with air or oxygen to improve the passivation process(col. 5 lines 52-54). Kovacs also teaches that the passivation temperature is 20-50°C and higher passivation temperature leads to faster passivation rate, but could also result in a less uniform passive layer(col. 5 lines 55-62).

Regarding claim 1, one of ordinary skill in the art would have found it obvious to have varied the passivation temperature in the passivation method of JP'990 via routine optimization to achieve desired passivation rate and the desired uniform passive layer on the metal surface, since Kovacs teaches that the passivation temperature is a result effective variable that affects the rate of passivation and the uniformity of the passive layer.

In addition, the alkaline passivation solution as taught by JP'990 in view of Kovacs has a pH that encompasses the claimed pH of 9-12. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed pH range from the disclosed range of JP'990 in view of Kovacs would have been obvious to one skilled in the art since JP'990 in view of Kovacs teach the same utilities in its' disclosed pH range.

Furthermore, since JP'990 teaches that the pH of its passivation solution is controlled, then the claimed addition of a pH buffer or the claimed pH buffer action is present within the passivation process of JP'990 in view of Kovacs.

Lastly, JP'990 in view of Kovacs teach the claimed alkaline solution containing the claimed carbon dioxides, the examiner concludes that the claimed passive film produced from metal ions constituting stainless steel and hydroxide ions is formed in the process of JP'990 in view of Kovacs.

Regarding claim 3, Kovacs further teaches that after the formation of passive film, the metal surface is rinsed with water and dried(col. 6 lines 11-13). Therefore, one of ordinary skill in the art would have found it obvious to have rinsed the stainless steel surface undergone the passivation process of JP'990 in view of Kovacs with water and dried the passive film as taught by Kovacs in order to remove excess passivation solution on the metal surface and to dry the passive film. In addition, even though JP'990 in view of Kovacs do not explicitly teach the claimed drying temperature of 100-200°C, one of ordinary skill in the art would have found it obvious to have varied the drying temperature in the process of JP'990 in view of Kovacs via routine optimization in order to achieve desired coating drying speed since the drying temperature directly affects how fast the passive layer becomes dry, i.e. result effective variable.

Regarding claim 4, even though JP'990 in view of Kovacs do not explicitly teach that the stainless steel member is a separator for fuel cell, one of ordinary skill in the art would have found it obvious to apply the metal surface treatment process of JP'990 in

view of Kovacs to a stainless steel member used for any purposes including the claimed separator in a fuel cell.

5. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. US 2003/0162077 A1(Ohtani) in view of Fukui et al. US 6,440,598 B1(Fukui), and further in view of Heimann et al. US 2003/0034095 A1(Heimann).

The teachings of Ohtani in view of Fukui and Heimann are discussed in paragraph 4 of the previous Non-Final Office Action mailed 14 November 2007. The rejection ground is maintained for the same reasons as stated in the previous Non-Final Office Action.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani in view of Fukui and Heimann, and further in view of Vashi US 4,497,667(Vashi).

The teachings of Ohtani in view of Fukui and Heimann are discussed in paragraph 5 of the previous Non-Final Office Action mailed 14 November 2007. The rejection ground is maintained for the same reasons as stated in the previous Non-Final Office Action.

Response to Arguments

7. Applicant's arguments, filed 14 March 2008, with respect to claims 1 and 3-4 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's arguments, filed 14 March 2008, with respect to claims 5-9 have been fully considered but they are not persuasive.

In the remarks, applicant argues that Ohtani describes a grinding process and does not teach any of the claimed processing steps.

The examiner does not find applicant's argument persuasive because the rejection ground for claims 5-8 are based on combined the teachings of Ohtani in view of Fukui and Heimann and Ohtani is incorporated into the rejection ground due to its teaching of press forming a metallic plate into a separator having alternate ridges and grooves(i.e. separator with gas and water flow passages) and subsequent passivation.

Applicant further argues that Fukui does not teach anything about passivating stainless steel surface.

The examiner does not find applicant's argument convincing since Fukui is incorporated into the rejection ground not for its teaching of passivating a stainless steel surface, but for its teaching of applying a lubricant during separator manufacturing process to improve workability during press forming.

Applicant further argues that Heimann does not describe the passivating layer as claimed because it describes depositing a mineral layer.

The examiner does not find applicant's argument persuasive because the metal treatment solution as taught by Heimann is an alkaline passivation solution having substantially the same pH and treatment temperature as claimed. The mineral layer formed by the process of Heimann, although not a hydroxide layer, is still a passive layer protecting the metal surface against corrosion. Most importantly, the instant claims 5-9 only recite a passivation treatment by an alkaline solution and do not require that the resulting passive coating layer only constitutes the stainless steel and hydroxide ions. Therefore, the mineral layer formed by the process of Heimann reads on the claimed passivation layer.

Applicant further argues that Vashi teaches away from claim 9 because it is directed to a cleaning and conditioning solution, not a passivation solution as claimed.

The examiner does not find applicant does not find applicant's argument persuasive since the alkaline solution as recited in instant claim 9 is directed to the alkaline cleaning solution used prior to passivation, not the alkaline passivation solution. Vashi is incorporated into the rejection ground for its teaching of alkaline cleaning solution, not for passivation. Therefore, Vashi does not teach away from claim 9.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LOIS ZHENG whose telephone number is (571)272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

LLZ
6/2/08